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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

Translation

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

Applicant's or agent's file reference

P 611019 PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/DE2004/001260

International filing date (day/month/year)

17.06.2004

Priority date (day/month/year)

23.06.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant

EADS DEUTSCHLAND GMBH

1. This opinion contains indications relating to the following items:



Box No. I

Basis of the opinion



Box No. II

Priority



Box No. III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability



Box No. IV

Lack of unity of invention



Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement



Box No. VI

Certain documents cited



Box No. VII

Certain defects in the international application



Box No. VIII

Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

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Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II

Priority

1. ☒ The following document has not yet been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-11	YES
	Claims	NO
Inventive step (IS)	Claims 1-11	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-11	YES
	Claims	NO

2. Citations and explanations:

- 1 The present opinion makes reference to the following documents:

D1: P. HOOGEBOOM ET AL: "SOSTAR, A EUROPEAN SYSTEM FOR AIRBORNE GROUND SURVEILLANCE" [Online] 28 January 2002 (2002-01-28), pages 1-4, XP002303903 found on the Internet:
URL: http://www.tno.nl/instit/fel/os/resources/SOSTAR_fullpaper.PDF>; [found on 2004-11-03]

- 2 Document D1 is regarded as the closest prior art. It discloses (the references between parentheses relate to said document):

A method for evaluating a received signal from an SAR/MTI pulse radar system which transmits SAR and MTI transmission pulses at a respectively predeterminable pulse repetition rate, the received signal being a superimposition of echo pulse sequences of SAR echo pulse signals and MTI echo pulse signals (page 3, left-hand column, paragraph 4 and right-hand column, paragraphs 2 and 3),

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from which the subject matter of independent claim 1 differs by the fact that:

in the received echo pulse sequence of the received signal, each pulse, which corresponds to an integral multiple of an integral ratio between the pulse repetition rate of the MTI transmitted signal and the pulse repetition rate of the SAR transmitted signal and is received after an SAR transmitted pulse, is evaluated in an SAR method, and the remaining pulses of the received echo pulse sequence of the received signal are evaluated in an MTI method,

the pulse which is missing owing to the SAR signal processing being reproduced for the MTI signal processing by means of interpolation methods.

2.1 The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

The problem addressed by the present invention can therefore be considered that of

specifying a method, with which simultaneous evaluation of received pulses is possible using an SAR method and an MTI method without a great deal of technical complexity.

2.2 The solution to this problem proposed in claim 1 of the present application involves an inventive step for the following reasons (PCT Article 33(3)):

the use of a pulse repetition rate for the MTI transmitted signal which corresponds to an

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integral multiple of the pulse repetition rate of the SAR transmitted signal, the relevant echo pulse being evaluated by means of an SAR method when the MTI and SAR echo pulses are superimposed and the MTI echo pulse which is lost in the process being reproduced by means of an interpolation method, is not known from the prior art and would also not be considered a conventional procedure by a person skilled in the art.

2.3 Claims 2-5 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and inventive step.

3 Document D1 is regarded as the closest prior art. It discloses (the references between parentheses relate to said document):

an antenna having a large number of transmission and reception modules, the transmission and reception modules being combined to form a predeterminable number of subgroups (page 3, left-hand column, paragraphs 1 and 2).

from which the subject matter of independent claim 6 differs by the fact that:

the antenna is suitable for carrying out a method according to one of claims 1-5.

3.1 The subject matter of claim 6 is therefore novel (PCT Article 33(2)).

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The problem addressed by the present invention can therefore be considered that of

specifying an antenna, with which a method for simultaneously evaluating received pulse in an SAR method and an MTI method is possible without a great deal of technical complexity, according to claims 1-5.

3.2 The solution to this problem proposed in claim 6 of the present application therefore involves an inventive step (PCT Article 33(3)) for the same reasons as specified above in paragraph 2.2.

3.3 Claims 7-11 are dependent on claim 6 and therefore likewise meet the PCT requirements for novelty and inventive step.